

# **A PERPENDICULAR RECORDING MAGNETIC HEAD WITH A WRITE SHIELD MAGNETICALLY COUPLED TO A FIRST POLE PIECE**

## **ABSTRACT OF THE DISCLOSURE**

A perpendicular recording write head has ferromagnetic first and second pole pieces which are connected at a back gap and an insulation stack with a write coil layer embedded therein is located between the first and second pole pieces and between a head surface of the write head and the back gap. The second pole piece has a pole tip, which is located at the head surface and a recessed ferromagnetic write shield layer. A nonmagnetic isolation layer is located between the second pole piece and the write shield layer and at least one ferromagnetic stud is magnetically connected between the first pole piece layer and the write shield layer and is located between the head surface and the insulation stack. The write pole formation is performed using ion milling.